

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Original) A method of storing hydrogen comprising: contacting gaseous hydrogen with an imide having one or more cations other than hydrogen, said one or more cations forming at least two distinct compounds different from said imide upon reaction with hydrogen.
2. (Original) The method of Claim 1 wherein said at least two distinct compounds comprise an amide and a hydride.
3. (Original) The method of Claim 1 wherein said imide is represented by $M^c(NH)^{-2}_{c/2}$, where M represents at least one cationic species other than hydrogen and c represents an average valence state of M.
4. (Original) The method of Claim 1 wherein said at least two distinct compounds comprise a first compound represented by $MI^d(NH_2)_d^{-1}$ (amide) and a second compound represented MII^fH_f (hydride), where MI and MII respectively represent cationic species or a mixture of cationic species other than hydrogen, and d represents an average valence state of MI and f represents an average valence state MII.
5. (Original) The method of Claim 1 wherein said imide is lithium imide represented by Li_2NH and said distinct compounds comprise a first compound represented by $LiNH_2$, and a second compound represented by LiH .
6. (Original) The method of Claim 3 wherein M comprises an element selected from the group consisting of Ba, Ca, Eu, La, Li, Mg, Sr, Th and mixtures thereof.

7. (Original) The method of Claim 2 wherein said imide is represented by the formula MgNH , said amide is represented by the formula $\text{Mg}(\text{NH}_2)_2$ and said hydride is represented by the formula MgH_2 .

8. (Original) The method of Claim 4 wherein said M, MI and MII are each elements independently selected.

9. (Original) The method of Claim 8 wherein said M, MI and MII are each elements independently selected from the group consisting of CH_3 , Al, As, B, Ba, Be, Ca, Cd, Ce, Cs, Cu, Eu, Fe, Ga, Gd, Ge, Hf, Hg, In, K, La, Li, Mg, Mn, Na, Nd, Ni, Pb, Pr, Rb, Sb, Sc, Se, Si, Sm, Sn, Sr, Th, Ti, Tl, W, Y, Yb, Zn, Zr, and mixtures thereof.

10. (Original) The method of Claim 8 wherein said M, MI and MII are each elements independently selected from the group consisting of Ba, Be, Ca, Cs, Eu, In, K, La, Li, Mg, Na, Ni, Rb, Sm, Sr, Yb, and mixtures thereof.

11. (Original) The method of Claim 8 wherein said M, MI and MII are each elements independently selected from the group consisting of Ba, Ca, Eu, La, Li, Mg, Sr, Th, and mixtures thereof.

12. (Original) The method of Claim 8 wherein said M, MI and MII are each elements independently selected from the group consisting of Ba, Ca, Si, Sr, Th, Ti, Zr, and mixtures thereof.

13. (Original) The method of Claim 8 wherein said M, MI and MII are each elements independently selected from the group consisting of Al, Ba, Be, Ca, Ce, Cs, Eu, Ga, Gd, In, K, La, Li, Mg, Mn, Na, Nd, Pb, Rb, Si, Sm, Sn, Sr, Y, Yb, Zn, and mixtures thereof.

14. (Original) The method of Claim 8 wherein M, MI and MII are each elements independently selected from the group consisting of Al, Be, B, Mg, Li and mixtures thereof.

15-32 (Cancelled)